

PATENT
Serial No. 09/819,286
Amendment in Reply to Final Office Action of June 27, 2005

IN THE CLAIMS

Please amend claims 29 and 35 as follows:

1 1. (Previously Presented) Processing apparatus adapted to
2 implement an artificial intelligence application, which application
3 requires use of training sets having positive and negative
4 examples, the apparatus comprising:

5 • at least one memory adapted to store data and/or instructions;
6 • at least one processor adapted to execute operations, using the
7 at least one memory, the operations comprising:

8 • recognizing and maintaining a set of positive examples for
9 training; and

10 • upon completion of recognition of the set of positive
11 examples, selecting a set of negative examples for training
12 responsive to the set of positive examples.

1 2. (Original) The apparatus of claim 1, wherein the set of
2 negative examples has a same number of members as the set of
3 positive examples.

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1 3.(Original) The apparatus of claim 1, wherein the artificial
2 intelligence application is a content recommender.

1 4.(Original) The apparatus of claim 3, wherein the content is
2 television shows.

1 5.(Original) The apparatus of claim 1, wherein
2 • the positive and negative examples are describable in accordance
3 with at least one feature, the feature having a plurality of
4 possible values within a feature space;
5 • the set of positive examples includes at least one subset, each
6 subset including a respective plurality of members sharing a
7 same respective value of a given feature in the feature space,
8 the given feature being one that has been determined in advance
9 to be a dominant feature in the feature space; and
10 the set of negative examples includes at least one respective
11 subset corresponding to the at least one subset of the set of
12 positive examples, the members of each respective subset of
13 negative examples being selected to share the same respective value
14 of the given feature with the members of the subset of the set of

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15 positive examples that corresponds with the respective subset of
16 negative examples.

1 6.(Original) The apparatus of claim 5, wherein the set of
2 negative examples includes at least one respective second subset of
3 negative examples, the members of the respective second subset of
4 negative examples being selected to have a value of the given
5 feature that lies within a predetermined range of the same value,
6 but excluding the same respective value.

1 7.(Original) The apparatus of claim 6, wherein no negative
2 example appears twice in the set of negative examples.

1 8.(Original) The apparatus of claim 5, wherein the given
2 feature is time of day.

1 9.(Original) The apparatus of claim 1, wherein the operations
2 include
3 . training the artificial intelligence application responsive to
4 the positive and negative examples; and

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- 5 • executing the artificial intelligence application to yield a
6 processing result in a useful application.

1 10. (Previously Presented) Apparatus adapted to implement an
2 artificial intelligence application, which application requires use
3 of training sets having positive and negative examples, the
4 positive and negative examples being describable in accordance
5 with at least one feature, the feature having a plurality of
6 possible values within a feature space, the apparatus comprising:

- 7 • at least one memory adapted to store data and/or instructions;
8 • at least one processor adapted to execute operations, using the
9 at least one memory, the operations comprising:

10 • recognizing and maintaining a set of positive examples for
11 training, the set of positive examples including at least one
12 subset, each subset including a respective plurality of
13 members sharing a same respective value of a given feature in
14 the feature space, the given feature being one that has been
15 determined in advance to be a dominant feature in the feature
16 space; and

- 17 • selecting a set of negative examples for training, the set of

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18 negative examples including at least one respective subset
19 corresponding to the at least one subset of the set of
20 positive examples, the members of each respective subset of
21 negative examples being selected to share the same respective
22 value of the given feature with the members of the subset of
23 the set of positive examples that corresponds with the
24 respective subset of negative examples.

1 11.(Original) The apparatus of claim 10, wherein the
2 artificial intelligence application is a content recommender.

1 12.(Original) The apparatus of claim 11, wherein the content
2 is television shows.

1 13.(Original) The apparatus of claim 10, wherein the set of
2 negative examples includes at least one respective second subset of
3 negative examples, the members of the respective second subset of
4 negative examples being selected to have a value of the given

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5 feature that lies within a predetermined range of the same
6 respective value, but excluding the same respective value.

1 14.(Original) The apparatus of claim 10, wherein no negative
2 example appears twice in the set of negative examples.

1 15.(Original) The apparatus of claim 13, wherein the given
2 feature is time of day.

1 16.(Previously Presented) Apparatus adapted to implement an
2 artificial intelligence application, which application requires use
3 of training sets having positive and negative examples, the
4 positive and negative examples being describable in accordance
5 with at least one feature, the feature having a plurality of
6 possible values within a feature space, the apparatus comprising:
7 • at least one memory adapted to store data and/or instructions;
8 • at least one processor adapted to execute operations, using the
9 at least one memory, the operations comprising:
10 • recognizing and maintaining a set of positive examples for

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11 training, the set of positive examples including at least one
12 subset, each subset including a plurality of members sharing a
13 same respective value of a given feature in the feature space,
14 the given feature being one that has been determined in
15 advance to be a dominant feature in the feature space; and
16 • selecting a set of negative examples for training, the set of
17 negative examples includes at least one respective subset of
18 negative examples, the members of the respective subset of
19 negative examples being selected to have a value of the given
20 feature that lies within a predetermined range of the same
21 respective value, but not including the same respective value.

1 17. (Original) The apparatus of claim 16, wherein the
2 artificial intelligence application is a content recommender.

1 18. (Original) The apparatus of claim 17, wherein the content
2 is television shows.

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1 19. (Original) The apparatus of claim 16, wherein no negative
2 example appears twice in the set of negative examples.

1 20. (Original) The apparatus of claim 16, wherein the given
2 feature is time of day.

1 21. (Previously Presented) Processing apparatus adapted to
2 implement an artificial intelligence application, which application
3 requires use of training sets having positive and negative
4 examples, the apparatus comprising:

- 5 • at least one memory adapted to store data and/or instructions;
- 6 • at least one processor adapted to execute operations, using the
7 at least one memory, the operations comprising:
 - 8 • recognizing and maintaining a set of positive examples for
9 training; and
 - 10 • selecting a set of negative examples for training, responsive
11 to the positive examples, wherein no member of the set of
12 negative examples appears twice.

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1 22.(Original) The apparatus of claim 21, wherein the
2 artificial intelligence application is a content recommender.

1 23.(Original) The apparatus of claim 22, wherein the content
2 recommender recommends television shows.

1 24.(Previously Presented) Apparatus adapted to implement an
2 artificial intelligence application, which application requires use
3 of training sets having positive and negative examples, the
4 positive and negative examples being describable in accordance with
5 at least one feature, the feature having a plurality of possible
6 values within a feature space, the apparatus comprising:
7 • at least one memory adapted to store data and/or instructions;
8 • at least one processor adapted to execute operations, using the
9 at least one memory, the operations comprising:
10 • recognizing and maintaining a set of positive examples for
11 training, the set of positive examples including at least one
12 subset, each subset including a plurality of members sharing a
13 same respective value of a given feature in the feature space,

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14 the given feature being one that has been determined in
15 advance to be a dominant feature in the feature space; and
16 . selecting a set of negative examples for training, the set of
17 negative examples including at least one respective subset of
18 negative examples, the members of the respective subset of
19 negative examples being selected to have a value of the given
20 feature that is approximately adjacent to same respective
21 value.

1 25. (Previously Presented) The apparatus of claim 24, wherein
2 the given feature is time of day, and adjacent means either within
3 an hour before or within an hour after.

1 26. (Previously Presented) The apparatus of claim 24, wherein
2 each respective subset of negative examples corresponds with a
3 respective one of the at least one subset of positive examples, so
4 that its respective value of the given feature is adjacent to the
5 same respective value of the corresponding subset.

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1 27. (Previously Presented) A method for selecting negative
2 examples for use in an artificial intelligence application, the
3 method comprising executing operations on at least one data
4 processing device, the operations comprising:
5 o selecting a set of positive examples that satisfy at least one
6 desired external criterion;
7 o upon completion of the selecting of the positive examples and
8 responsive thereto, selecting a set of negative examples.

1 28. (Previously Presented) A method of training an artificial
2 intelligence application, the method comprising executing
3 operations in at least one data processing device, the
4 operations comprising:
5 o selecting negative examples in accordance with the method of
6 claim 27; and
7 o training the artificial intelligence application using the
8 negative examples.

1 29. (Currently Amended) The method of claim 27, wherein:

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- 2 o the operations further comprise, upon completion of selecting
3 the positive examples, determining a particular value of a
4 given feature in feature space, which particular value ~~appears~~
5 to characterizes a significant subset of the positive
6 examples; and
- 7 o the selecting of the set of negative examples is such that a
8 significant subset of the negative examples has a selected
9 value responsive to the particular value of the given feature
10 in feature space.

1 30. (Previously Presented) The method of claim 29, wherein the
2 selected value is the same as the particular value.

1 31. (Previously Presented) The method of claim 29, wherein the
2 selected value lies in a selected range around the particular value
3 in feature space, but is not the same as the particular value.

1 32. (Previously Presented) A method of training an artificial
2 intelligence application, the method comprising executing

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3 operations in at least one data processing device, the operations
4 comprising:

- 5 o selecting negative examples in accordance with the method of
- 6 claim 29; and
- 7 o training the artificial intelligence application using the
- 8 negative examples.

1 33.(Previously Presented) The method of claim 29, wherein the
2 artificial intelligence application recommends content.

1 34.(Previously Presented) A medium readable by at least one
2 data processing device and embodying code for causing the data
3 processing device to execute operations, the operations comprising:
4 o selecting a set of positive examples that satisfy at least one
5 desired external criterion; and
6 o upon completion of the selecting of the positive examples and
7 responsive thereto, selecting a set of negative examples.

1 35.(Currently Amended) The medium of claim 34, wherein:

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- 2 o the operations further comprise, upon completion of selecting
3 the positive examples, determining a particular value of a
4 given feature in feature space, which particular value appears
5 to characterizes a significant subset of the positive
6 examples; and
- 7 o the selecting of the set of negative examples is such that a
8 significant subset of the negative examples has a selected
9 value responsive to the particular value of the given feature
10 in feature space.

1 36.(Previously Presented) The method of claim 35, wherein the
2 selected value is the same as the particular value.

1 37.(Previously Presented) The method of claim 35, wherein the
2 selected value lies in a selected range around the particular value
3 in feature space, but is not the same as the particular value.

1 38.(Previously Presented) The method of claim 35, wherein the
2 operations further comprise training an artificial intelligence
3 application using the positive and negative examples.

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1 39. (Previously Presented) The medium of claim 38, wherein the
2 operations further comprise running the artificial intelligence
3 application to give a solution to a real external problem.

1 40. (Previously Presented) The medium of claim 39, wherein the
2 solution is a content recommendation.